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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JACKSON, MONIQUE R

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/644,012

Applicant(s)

DAVIS ET AL.

Examiner

Monique R Jackson

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 and 28-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 16-27 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I with species iii in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 11-15 and 28-25 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Claim Objections

3. Claim 21 is objected to because of the following informalities: "styene-butadiene-styrene block co-copolymer" should probably be "styrene-butadiene-styrene block copolymer."
Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1-10, 16-27 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite various components of the adhesive composition in particular weight percentages however several of the components read on one another, for example, the poly(arylene) ether resin may also a thermosetting resin or a toughening agent, and the epoxy thermosetting resin may read on a toughening agent or cure agent or a flame retardant in the case of the brominated epoxy. A claim in which one ingredient

Art Unit: 1773

is defined so broadly that it reads upon a second does not meet the requirements of 35 U.S.C.

112, second paragraph. See *Ex parte Ferm and Boynton*, 162 USPQ (BdPatApp & Int 1969.)

6. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 recites the limitation “adhesive of Claim 19, wherein the toughening agent is styene-butadiene-styrene block co-copolymer” however Claim 19 recites that the toughening agent is polyvinyl butyral. Hence it is unclear how the polyvinyl butyral can be an SBS copolymer as recited in Claim 21.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-10, 16-18, 22, 24-27, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 921 158 (EP '158.) EP'158 teaches poly(phenylene ether)(PPE) thermoset compositions comprising PPE, an allylic compound, at least one of a brominated epoxy compound and a mixture of a brominated and non-brominated epoxy compound, and at least one

Art Unit: 1773

of a cure catalyst or a curing agent wherein the compositions are curable and flame resistant (Abstract.) The PPE has a number average molecular weight of from about 3,000 to about 15,000 g/mol and is preferably poly (2,6-dimethyl-1,4-phenylene ether) or poly(2,6-dimethyl-1,4-phenylene-co-2,3,6-trimethyl-1,4-phenylene ether) which read on the instantly claimed poly(arylene ether) resins and wherein the low molecular weight PPE resin can be formed by reacting high molecular weight resin with a peroxide (Page 3, line 5-Page 7, line 18.) The epoxy or the brominated epoxy compounds taught by EP'158 include those as instantly claimed including the condensation product of a bisphenol polyglycidyl ether, such as diglycidyl ether of bisphenol A or F, and a bromine-substituted bisphenol, such as tetrabromobisphenol A as in instant Claims 8 and 9, wherein the brominated epoxy component(s) are utilized to impart sufficient flame retardancy to the thermoset resin and hence it is preferred that the brominated epoxy components be used at levels such that the total bromine content exceeds about 10% by weight of the curable composition, more preferably at levels exceeding about 10% by weight of the poly(phenylene ether) (Page 7, line 50-Page 9, line 9.) EP'158 further teach that the composition may comprise additional additives such as fire retardant additives, fillers, plasticizers, colorants, and additional thermoset or thermoplastic resin additives for the purpose of improving properties such as toughness, impact strength or thermal stability (Page 9, line 28-39.) EP'158 teach that preferred embodiments comprise PPE in an amount of from about 2 to about 60 percent by weight of the total composition; the allylic compound in an amount of from about 40 to about 80 percent by weight of the total composition; at least one of a brominated epoxy compound and a mixture of a brominated and non-brominated epoxy compound in an amount of from about 0.01 to about 50 percent by weight of the total composition; and a cure

Art Unit: 1773

catalyst or curing agent in an amount from 0.01 to 6% by weight of the total composition (Page 3, lines 21-28; Claim 2.) EP'158 further teach that the brominated epoxy compound comprises from about 0.01 to about 40% by weight of the total composition (Claim 5.) EP'158 also teaches that the allylic compound is preferably a triallyl cyanurate, triallyl isocyanurate, diallyl phthalate or an allyl glycidyl ether (Claim 10.) EP'158 teach specific examples of the curable composition wherein the weight percentages of the components fall within the instantly claimed ranges particularly given that the instantly claimed invention comprises components so broadly defined that they read upon one another.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 19-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP'158 in view of Sugio et al (USPN 4,496,695) or Marhevka et al (USPN 5,712,039.) The teachings of EP'158 are discussed above. Though EP'158 teach that the curable composition can further comprise a toughening agent or a plasticizer, EP'158 does not specifically teach the plasticizers as instantly claimed or toughening agents as instantly claimed in an amount of 1-15wt%. However, polyvinyl butyral and styrene butadiene styrene are obvious species of toughening agents utilized which are suitable in the art for providing toughening properties to similar curable compositions and further phosphate compounds are also conventionally utilized in the art as plasticizers in similar curable composition, as taught by Marhevka et al or Sugio et

Art Unit: 1773

al, wherein one having ordinary skill in the art would have been motivated to include these conventional additives in amount necessary to provide the desired toughening or plasticizing effect for a particular end use of the curable composition taught by EP'158.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yeager (USPN 6,387,990) teach a curable epoxy resin composition comprising brominated flame retardants and poly(phenylene ether.) Gaku et al (USPN 4,904,760) teach a thermosetting resin composition comprising a cyanate ester compound, an epoxy resin, and optionally polyphenylene ether. Katayose et al (USPN 5,352,745) teach a curable polyphenylene ether and cyanurate resin further comprising a brominated epoxy compound.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Monique R. Jackson
Patent Examiner
Technology Center 1700
October 15, 2002